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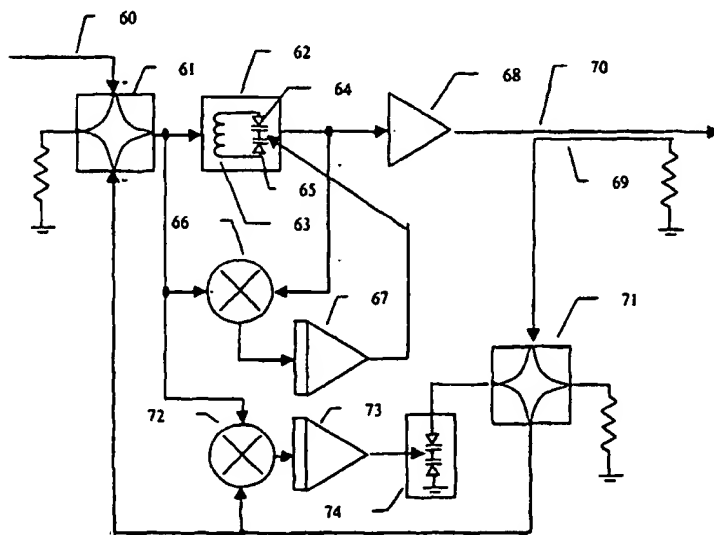
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(54) Title: **RADIO FREQUENCY FEEDBACK AMPLIFIER CIRCUITS**



(57) Abstract: A radio frequency feedback amplifier circuit of high linearity within the range of frequencies with which the circuit is to be used comprises a high gain amplifier incorporating a bandpass filter in the form of a single resonator which may be tunable, connected in the forward path of the amplifier stage and tuned so that its resonant frequency is at substantially the signal frequency, and a linear passive feedback circuit. A tuning arrangement (64, 65, 66, 67) comprises phase detection means (66), such as a Gilbert cell, for determining the phase shift across the resonator (62) and for adjusting a variable capacitance (64, 65) within the resonator (62) to tune the resonant circuit, in dependence on the frequency of the input to the circuit. Such an amplifier circuit may be used to achieve high linearity and stability at reasonable manufacturing cost, with much greater simplicity than can be achieved using other feedback techniques.

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